AMENDMENTS TO THE SPECIFICATION:

*Please replace paragraph **[0012]** with the following amended paragraph:*

[0012] It is therefore an ~~important~~ object ~~of the present invention~~ at this stage to provide ~~the provision of~~ means and methods for allowing an effective authentication mechanism of WLAN users as well as a complete encryption mechanism throughout the whole communication path starting from the Terminal Equipment of said users.

*Please replace paragraph **[0022]** with the following amended paragraph:*

[0022] In this respect, it is an object ~~of the present invention the achievement of~~ to achieve a much higher security level allowing the operator to choose an encryption algorithm that better ~~suites~~ suits their security needs. Notice that there is usually a trade-off between security level and performance. Therefore, additional features like supporting keys with a length of 128, 168, 256 bits, etc.; as well as supporting the latest most secure algorithms, like AES for instance, and a key rotation procedure may be considered another object ~~of the present invention~~.

*Please replace paragraph **[0023]** with the following amended paragraph:*

[0023] Moreover, in accordance with this application above, US 2002/0009199, the encrypted path goes from the Mobile Terminal to the AP, since WEP is only applicable to the radio path. In this respect, the support for an encryption path to be established beyond the AP, and covering also the wired part of the WLAN, is a further object ~~of the present invention~~.

*Please replace paragraph **[0024]** with the following amended paragraph:*

[0024] Furthermore, US 2002/0009199 teaches that the assignment of an IP address is done before running the authentication process, and hence, a malicious user can potentially initiate a whole set of well-known attacks. However, if a user ~~had~~ has no means to get IP connectivity before having been effectively authenticated, the risk would decrease greatly. Thereby, it is a further object ~~of the present invention the provision of~~ to provide an authentication mechanism for a user to be carried out before giving IP connectivity to said user.

*Please replace paragraph **[0026]** with the following amended paragraph:*

[0026] In summary, an ~~important~~ object ~~of the present invention~~ is ~~the provision of a~~ to provide system, means and methods for allowing an effective SIM-based user authentication and for establishing a complete encryption path, starting from the TE, for WLAN users who are subscribers of a public land mobile network. Another ~~particularly important~~ object is that this SIM-based user authentication might be performed before giving IP connectivity to said user.

*Please replace paragraph **[0027]** with the following amended paragraph:*

[0027] A further object ~~of the present invention~~ is ~~the support of~~ supporting keys of variable length, the use of security algorithms at operator choice, and providing ~~provision of~~ a key rotation procedure.

*Please replace paragraph **[0028]** with the following amended paragraph:*

[0028] A still further object ~~of the present invention~~ is ~~the achievement of~~ to achieve the previous objects with a minimum impact on conventional WLAN scenarios.

*Please replace paragraph **[0029]** with the following amended paragraph:*

[0029] The objects ~~of the invention~~ are achieved with a method for allowing a SIM-based authentication to users of a wireless local area network who are subscribers of a public land mobile network by means of a data link layer (layer-2) authentication mechanism. An ~~important~~ aspect of this method is that the IP connectivity is only provided to the user when the authentication process has been successfully completed.

*Please replace paragraph **[0030]** with the following amended paragraph:*

[0030] The objects ~~of the invention~~ are thus achieved with a method wherein a wireless terminal finds an accessible Access Point and requests association to the wireless local area network, and the Access Point accepts the request for that. The wireless terminal then initiates the discovering of an Access Controller interposed between the Access Point and the public land mobile network.

*Please replace paragraph **[0037]** with the following amended paragraph:*

[0037] Also for accomplishing the objects ~~of the present invention~~ there is provided an Access Controller that comprises a Point-to-Point server residing at an OSI layer-2 for communicating with the wireless terminal; and an authentication protocol residing at an OSI application layer for communicating with the public land mobile network. Moreover, this Access Controller further comprises means for shifting the information received on top of the Point-to-Point layer-2 protocol upwards to an appropriate authentication protocol residing at application layer. Likewise, the Access Controller also comprises means for shifting the information received on

the authentication protocol residing at application layer downwards on top of the Point-to-Point layer 2 protocol.

*Please replace paragraph **[0038]** with the following amended paragraph:*

[0038] In order to ~~fully~~ accomplish the objects ~~of the invention~~, it is also provided a wireless terminal comprising functionality for acting as a Point-to-Point layer 2 protocol client and having an Extensible Authentication Protocol on top of this Point-to-Point layer 2 protocol.

*Please replace paragraph **[0039]** with the following amended paragraph:*

[0039] ~~The~~ In one aspect, an overall solution ~~provided by the invention~~ results in a telecommunication system comprising a wireless local area network that includes at least one Access Point, a public land mobile network, at least one wireless terminal as above, and the Access Controller above.

*Please replace paragraph **[0041]** with the following amended paragraph:*

[0041] FIG. 1 represents an ~~a preferred~~ embodiment of how a user of a conventional mobile network accessing through a WLAN, which can be accessed by mobile and non-mobile users, may be authenticated by his own mobile network and may have an encrypted path from the TE to his own mobile network.

*Please replace paragraph **[0045]** with the following amended paragraph:*

[0045] The following describes ~~currently preferred~~ embodiments of means, methods and system for allowing an effective SIM-based user authentication and for establishing a complete

encryption path starting from the TE for WLAN users who are subscribers of a public land mobile network. In accordance with an aspect ~~of the present invention~~, this SIM-based user authentication is performed before having given IP connectivity to said user.

*Please replace paragraph **[0046]** with the following amended paragraph:*

[0046] Therefore, an overall sketch of a preferred embodiment is presented in FIG. 1, showing a general scenario where subscribers of a public land mobile network (GSM/GPRS/UMTS), as well as other local non-mobile users, access a wireless local area network (WLAN). This general scenario in FIG. 1 proposes a particularly simple architecture aimed to minimise the impacts on an existing conventional WLAN in order to accomplish one or more of the stated objects ~~of the present invention~~. This rather simple architecture involves different entities from a WLAN and from a public land mobile network, which are described following this. Moreover, Fig. 2 presents an even more simplified architecture in accordance with another embodiment ~~of the present invention~~ for a WLAN giving access only to subscribers of a public land mobile network and without local WLAN users.

*Please replace paragraph **[0049]** with the following amended paragraph:*

[0049] Other entities in the scenarios in Fig. 1 and 2 are the Access Points that behave as plain standard radio stations according to the standard 802.11b, without any additional logic. Unlike other possible solutions, as explained in respect of the coming standard 802.1x, the approach offered by the one or more embodiments ~~present invention~~ allows the reuse of the cheap existing hardware instead of having to replace or upgrade all AP's present in the WLAN. These unchanged AP's might run in this scenario with WEP support turned off, since such WEP offers

by itself a little security compared to the security mechanisms that are implemented on top of the PPPoE layer.

*Please replace paragraph **[0050]** with the following amended paragraph:*

[0050] In accordance with an aspect ~~of the present invention~~, there is provided a new entity, the Access Controller (hereinafter referred to as AC) in both Fig. 1 and 2 that comprises the ~~required~~ PPPOE server functionality. This PPPoE server is automatically discovered by the Terminal Equipment (TE), by means of a built-in mechanism in the PPPoE protocol, namely through a handshake initiated by a broadcast message. This Access Controller (AC) also comprises a RADIUS client functionality that has the responsibility of gathering client credentials, received through EAP attributes carried on top of a PPP, and sending them toward a conventional WLAN Authentication Server (WLAN-AS), also through EAP attributes carried now on top of RADIUS messages. A component like this Access Controller (AC) is also a core part for the purpose of the ~~present solution~~ one or more embodiments.

*Please replace paragraph **[0052]** with the following amended paragraph:*

[0052] A further entity present ~~only~~ in the most general scenario shown in Fig. 1 is a WLAN-Authentication Server (WLAN-AS) that implements the functionality of a local authenticator server for local WLAN users, not belonging to the mobile operator, and who may be thus authenticated by other means such as a plain user and password matching. This WLAN-AS also plays the role of a RADIUS proxy, when receiving authentication messages from the Access Controller and forwards, them toward an Authentication Gateway (hereinafter referred to as AG) in the public land mobile network operator's domain.

*Please replace paragraph **[0053]** with the following amended paragraph:*

[0053] The WLAN-AS ~~is only required for the purpose of the present invention in order~~ functions to authenticate own WLAN users who are not mobile subscribers of the public land mobile network. Consequently, a WLAN intended for giving access only to subscribers of a mobile network may get rid of such entity without affecting the authentication of said mobile subscribers and the establishment of an encrypted path~~, scope of the present invention~~. In this respect, Fig. 2 presents an embodiment of a simplified architecture for a WLAN giving access only to subscribers of a public land mobile network as explained above wherein the WLAN-AS is thus not included.

*Please replace paragraph **[0055]** with the following amended paragraph:*

[0055] In short, the Access Controller, the aforementioned PPPoE client, which is embedded in the Terminal Equipment, and this Authentication Gateway are the ~~core~~ entities included in one or more embodiments. ~~for the purpose of the present invention.~~ The particular description for the functions residing in such entities is merely illustrative and in non-restrictive manner.

*Please replace paragraph **[0057]** with the following amended paragraph:*

[0057] On the other hand, the manner in which the different elements carry out some aspects of the ~~present invention accordingly with currently preferred~~ one or more embodiments is described below with reference to the sequence of actions depicted in Fig. 4.